



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Freeman et al. Art Unit : 3764  
Serial No. : 10/786,359 Examiner : Unknown  
Filed : February 24, 2004  
Title : USING CHEST VELOCITY TO PROCESS PHYSIOLOGICAL SIGNALS TO REMOVE CHEST COMPRESSION ARTIFACTS

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
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INFORMATION DISCLOSURE STATEMENT

Applicants submit copies of the references listed on the attached form PTO-1449. Only copies of foreign patent documents and non-patent literature are enclosed. Applicants do not concede that the listed references are prior art.

This statement is being filed before the receipt of a first Office Action on the merits.  
Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: November 3, 2004

  
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Reg. No. 28,963

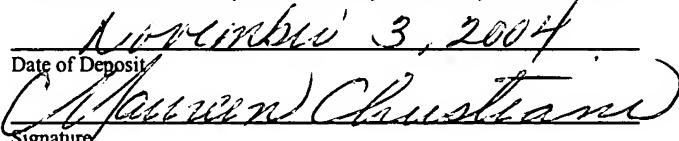
Reg. No. 30,175

Fish & Richardson P.C.  
225 Franklin Street  
Boston, MA 02110-2804  
Telephone: (617) 542-5070  
Facsimile: (617) 542-8906

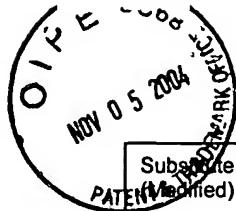
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Substitute Form PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 04644-156001	Application No. 10/786,359
<b>Information Disclosure Statement</b> <b>by Applicant</b> <small>(Use several sheets if necessary)</small> <small>(37 CFR §1.98(b))</small>		Applicant	Freeman et al.	
		Filing Date	February 24, 2004	
		Group Art Unit	3764	

## U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	6687540	02/03/04	Marcovecchio			
	AB	6671545	12/30/03	Fincke			
	AC	6658290	12/02/03	Lin et al.			
	AD	6597943	07/22/03	Taha et al.			
	AE	6496731	12/17/02	Lovett			
	AF	6438419	08/20/02	Callaway et al.			
	AG	6418342	07/09/02	Owen et al.			
	AH	6393316	05/21/02	Gillberg et al.			
	AI	6351671	02/26/02	Myklebust et al.			
	AJ	6308094	10/23/01	Shusterman et al.			
	AK	6263238	07/17/01	Brewer et al.			
	AL	6246907	06/12/01	Lin et al.			
	AM	6224562	05/01/01	Lurie et al.			
	AN	6178357	01/23/01	Gliner et al.			
	AO	6171257	01/09/01	Weil et al.			
	AP	5957856	09/28/99	Weil et al.			
	AQ	5755671	05/26/98	Albrecht et al.			
	AR	5735879	04/07/98	Gliner et al.			
	AS	5700281	12/23/97	Brewer et al.			
	AT	5683424	11/04/97	Brown et al.			
	AU	5662690	09/02/97	Cole et al.			
	AV	5645571	07/08/97	Olson et al.			
	AW	5619265	04/08/97	Suzuki et al.			
	AX	5617853	04/08/97	Morgan			
	AY	5611815	03/18/97	Cole et al.			
	AZ	5591213	01/07/97	Morgan			
	AAA	5589639	12/31/96	Antonio et al.			

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

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U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	ABB	5562710	10/08/96	Olsen et al.			
	ACC	5511553	04/30/96	Segalowitz			
	ADD	5474574	12/12/95	Payne et al.			
	AEE	5466244	11/14/95	Morgan			
	AFF	5391187	02/21/95	Freeman			
	AGG	5285792	02/15/94	Sjoquist et al.			
	AHH	5247945	09/28/93	Heinze et al.			
	AII	5109862	05/05/92	Kelen et al.			
	AJJ	5092341	03/03/92	Kelen			
	AKK	5077667	12/31/91	Brown et al.			
	ALL	4928674	05/29/90	Halperin et al.			
	AMM	4680708	07/14/87	Ambos et al.			
	ANN	4619265	10/28/86	Morgan et al.			
	AOO	4610254	09/09/86	Morgan et al.			
	APP	4588383	05/13/86	Parker et al.			
	AQQ	4296755	10/27/81	Judell			
	ARR	4088138	05/09/78	Diack et al.			
	ASS	RE 34800	11/29/94	Hutchins			
	ATT	RE 30372	08/19/80	Mirowski et al.			
	AUU	2002/0193711	12/19/02	Halperin et al.			
	AVV	2002/0165471	11/07/02	Halperin et al.			
	AWW	2002/0055694	05/09/02	Halperin et al.			
	AXX	2002/0026131	02/28/02	Halperin			

Foreign Patent Documents or Published Foreign Patent Applications							
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation
							Yes No
	AYY	02/15836	02/28/02	PCT			

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<b>Foreign Patent Documents or Published Foreign Patent Applications</b>							
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation
							Yes No
	AZZ	1057451	12/06/00	Europe			
	AAAA	99/25306	05/27/99	PCT			
	ABBB	99/24114	05/20/99	PCT			
	ACCC	98/30282	07/16/98	PCT			
	ADDD	9713345.8	06/24/97	Great Britain			

<b>Other Documents (include Author, Title, Date, and Place of Publication)</b>		
Examiner Initial	Desig. ID	Document
	AEEE	Aase et al., "Compression Depth Estimation for CPR Quality Assessment Using DSP on Accelerometer Signals," IEEE Transactions on Biomedical Engineering, Vol. 49, No. 3, March 2002
	AFFF	Afonso et al., "Detecting Ventricular Fibrillation", IEEE Engineering In Medicine and Biology, Vol. 14:2, pp. 152-159 (1995)
	AGGG	Al-Fahoum et al., "Combined wavelet transformation and radial basis neural networks for classifying life-threatening cardiac arrhythmias", Medical & Biological Engineering & Computing, Vol. 37:5, pp. 566-573 (1999)
	AHHH	Amann et al., Reliability of Fibrillation Detection Algorithms In Automatic External Defibrillators (AEDs)", Dept. of Anaesthesia and Intensive Care Medicine, Leopold-Franzens-Universitat Innsbruck, Anichstr. 35, A-6020 Innsbruck, Austria, Dept. of Computer Science, Applied Mathematics Group, FH-Vorarlberg, Achstr. 1, A-6850 Dornbirn, Austria. At the top of the paper I have is the following: Jahrestagung der Österreichischen Deutschen und Schweizerischen Gesellschaft für Biomedizinische Technik Sept. 2003
	AIII	American Red Cross--Adult CPR/AED Training--Workplace Programs, <a href="http://www.redcross.org/hss/cpraed.html">http://www.redcross.org/hss/cpraed.html</a> , printed from Internet 05/14/99
	AJJJ	Barro et al., "Algorithmic sequential decision-making in the frequency domain for life threatening ventricular arrhythmias and imitative artifacts: a diagnostic system", J. Biomed. Eng., Vol. 11:4, pp. 320-328 (1989)
	AKKK	Botsivaly et al., "Evaluation of a new technique for the Detection of Ventricular Fibrillation and Ventricular Tachycardia", Procs of the 22 <sup>nd</sup> Ann EMBS Int Conf, Chicago, IL (2000)
	ALLL	Callaway et al., "Scaling exponent predicts defibrillation success for out-of-hospital ventricular fibrillation cardiac arrest," Circulation 103(12):1656-1661 (2001)
	AMMM	Callaway et al., "Ventricular Fibrillation Waveform Predicts Defibrillation Success by Automatic External Defibrillators", Academic Emergency Medicine, Vol. 7:5, pp. 1-2 (2000)
	ANNN	Cardiac Science Brochure, Analysis Algorithm Overview, Powerheart® AED Automated External Defibrillator with RHYTHMx® Technology (no date)
	AOOO	Clayton et al., "Comparison of four techniques for recognition of ventricular fibrillation from the surface ECG", Medical & Biological Engineering & Computing, Vol. 31:2, pp. 111-117 (1993)
	APPP	Eftestøl et al., "Predicting Outcome of Defibrillation by Spectral Characterization and Nonparametric Classification of Ventricular Fibrillation in Patients With Out-of-Hospital Cardiac Arrest", Circulation, 102:1523-1529 (2000)

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<b>Other Documents (include Author, Title, Date, and Place of Publication)</b>		
Examiner Initial	Desig. ID	Document
	AQQQ	Efestol et al., "Probability of successful defibrillation as a monitor during CPR in out-of-hospital cardiac arrested patients," <i>Resuscitation</i> 48(3):245-254 (2001)
	ARRR	Fitzgibbon et al., "Determination of the noise source in the electrocardiogram during cardiopulmonary resuscitation", <i>Crit Care Med</i> , Vol. 30:4, pp. S148-S152 (2002)
	ASSS	Flewelling, Nellcor Incorporated, <i>Noninvasive Optical Monitoring</i> , Chap. 88, pp. 1346-1353. CRC Press, Inc., 1995
	ATTT	Force Sensing Resistors - An Overview of the Technology, <i>FSR Integration Guide &amp; Evaluation Parts Catalog with Suggested Electrical Interfaces</i> (no date)
	AUUU	Ge et al., "Cardiac arrhythmia classification using autoregressive modeling", <i>Biomed Eng. Online</i> , pp. 13, (2002)
	AVVV	Geheb, Frederick J., "A System for the Determination of Ventricular Tachycardia or Ventricular Fibrillation during Cardio-Pulmonary Resuscitation", 2 pages (April, 2002)
	AWWW	Gruben et al., "System for Mechanical Measurements During Cardiopulmonary Resuscitation in Humans," <i>IEEE Transactions on Biomedical Engineering</i> , Vol. 37, No. 2, February 1990
	AXXX	Heartstream - The Background Behind Our Technology, <a href="http://www.heartstream.com/techbk.htm">http://www.heartstream.com/techbk.htm</a> , printed from Internet 06/25/99
	AYYY	Khadra et al., "Detection of life-threatening cardiac arrhythmias using the wavelet transformation", <i>Medical &amp; Biological Engineering &amp; Computing</i> , Vol. 35:5, pp. 626-632 (1997)
	AZZZ	Kuo et al., "Computer Detection of Ventricular Fibrillation", <i>Computers in Cardiology</i> , pp. 347-349 (September, 1978)
	AAAAA	Lightfoot et al., "Dynamic nature of electrocardiographic waveform predicts rescue shock outcome in porcine ventricular fibrillation," <i>Ann. Emerg. Med.</i> 42(2):230-41 (Aug. 2003)
	BBBBB	Menegazzi et al., "Immediate defibrillation versus interventions first in a swine model of prolonged ventricular fibrillation", <i>Resuscitation</i> , Vol. 59, pp. 261-270 (2003)
	CCCCC	Menegazzi et al., "Ventricular Fibrillation Scaling Exponent Can Guide Timing of Defibrillation and Other Therapies", <i>Circulation</i> , 109:926-931 (February, 2004)
	DDDDD	Nygards et al., "Recognition of Ventricular Fibrillation Utilizing The Power Spectrum of The ECG", <i>Computers in Cardiology</i> , pp. 393-397 (1997)
	EEEE	Povoas et al., "Predicting the success of defibrillation by electrocardiographic analysis," <i>Resuscitation</i> 53(1):77-82 (2002)
	FFFFF	Sherman et al., "Ventricular fibrillation exhibits dynamical properties and self-similarity", <i>Resuscitation</i> , Vol. 47, pp. 163-173 (2000)
	AGGGG	Wang et al., "Effects of Biphasic vs Monophasic Defibrillation on the Scaling Exponent in a Swine Model of Prolonged Ventricular Fibrillation", <i>Academic Emergency Medicine</i> , Vol. 8:8, pp. 771-780 (2001)
	AHHHH	Watson et al., "A novel wavelet transform based analysis reveals hidden structure in ventricular fibrillation", <i>Resuscitation</i> , Vol. 43:2, pp. 121-127 (2000)
	AIIII	Yaji et al., "Adverse effects of interrupting precordial compression during cardiopulmonary resuscitation", <i>Critical Care Medicine</i> , Vol. 25:5, pp. 733-736 (1997)

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